

### Claims

1. A mixture of non-animal based components for use as a blood-simulating control for checking the accuracy of complete blood count (CBC) analysis instruments and complete blood count analysis centrifuge tubes, said mixture comprising:
  - a) a first liquid component which simulates red blood cells in a blood sample;
  - b) at least one artificial particulates component which is less dense than said first liquid component and which simulates at least one buffy coat component in a blood sample;
  - c) a second liquid component which is less dense than each of said first liquid component and said particulates component and which simulates plasma in a blood sample, said second liquid component being immiscible with said first liquid component; and
  - d) said mixture being convertible into a homogeneous emulsion which simulates an anticoagulated whole blood sample.
2. The mixture of Claim 1 wherein the emulsion gravimetrically separates into its individual component layers when the emulsion is centrifuged in one of the CBC analysis centrifuge tubes.
3. The mixture of Claim 1 wherein each of said mixture components are present in the mixture in predetermined amounts which amounts correlate to components of a predetermined CBC.
4. The mixture of Claim 1 wherein the individual microspheres in each of said microspheres components are sized differently from the individual microspheres in each of the other microspheres components so as to facilitate gravimetric settling of the microspheres components by size as well as by density.
5. The mixture of Claim 1 wherein the microspheres in each in each of the microspheres components are differentially colored.

6. The mixture of Claim 1 wherein the liquid components are differentially colored.
7. The mixture of Claim 1 further comprising one or more surfactants which enhance gravimetric separation of the several components in the mixture.
8. The mixture of Claim 1 further comprising one or more surfactants which facilitate formation of a gravimetrically separatable emulsion which emulsion can be prepared by simple inversion of the mixture.
9. A mixture of non-animal based components for use as a blood-simulating control for checking the accuracy of complete blood count (CBC) analysis instruments and CBC analysis centrifuge tubes, said mixture comprising:
  - a) a first liquid component which simulates red blood cells in a blood sample;
  - b) a first artificial microspheres component which is less dense than said first liquid component and which simulates granulocytes in a blood sample;
  - c) a second artificial microspheres component which is less dense than both of said first liquid component and said first microspheres component, and which simulates lymphocytes and monocytes in a blood sample;
  - d) a third artificial microspheres component which is less dense than each of said first liquid component, said first microspheres component, and said second microspheres component, and which simulates platelets in a blood sample;
  - e) a second liquid component which is less dense than each of said first liquid component, said first microspheres component, said second microspheres component, and said third microspheres component, and which simulates plasma in a blood sample, said second liquid component being immiscible with said first liquid component; and
  - f) said mixture being convertible into a homogeneous emulsion which simulates an anticoagulated whole blood sample.
10. The mixture of Claim 9 wherein the emulsion gravimetrically separates into its individual component layers when the emulsion is centrifuged in one of the CBC analysis centrifuge tubes.

11. The mixture of Claim 9 wherein each of said mixture components are present in the mixture in predetermined amounts which amounts correlate to components of a predetermined CBC.

12. The mixture of Claim 9 wherein the individual microspheres in each of said microspheres components are sized differently from the individual microspheres in each of the other microspheres components so as to facilitate gravimetric settling of the microspheres components by size as well as by density.

13. The mixture of Claim 9 wherein the microspheres in each in each of the microspheres components are differentially colored.

14. The mixture of Claim 9 wherein the liquid components are differentially colored.

15. The mixture of Claim 9 further comprising one or more surfactants which enhance gravimetric separation of the several components in the mixture.

16. The mixture of Claim 9 further comprising one or more surfactants which surfactants facilitate formation of a gravimetrically separatable emulsion which emulsion can be prepared by simple inversion of the mixture.